

INNOVATIVE FIBER OPTIC SOLUTIONS

SERVICE PROVIDER

Metro Service Provider Gains Performance Advantage at the Network Edge

Objective

- Deliver high-performance networking solution to regional school districts that will decrease costs and minimize management hassles
- Design a network that supports current applications and future bandwidth-intensive applications
- Deploy a scalable Gigabit Ethernet network that is robust, secure, easy to manage, and supports future growth

Solution

- Brocade FastIron Edge X Series, FastIron SuperX, and IronView Network Manager deliver robust performance, reliability, and scalability
- A 260-mile network with redundant ring topologies and a fiber optic cable backbone links all school campuses and buildings in four counties

Results

- Provides as much as 10-times the bandwidth of the previous network
- Reduces network upgrade costs by 1/3
- Saves each school district approximately \$1,000 per month
- Introduces easy upgrade path from 1-Gigabit to 2-Gigabit and 10-Gigabit Ethernet to 20-Gigabit Ethernet due to advanced edge networking technology

Innovative Fiber Optic Solutions, also known as iFiber, has been a leader among the southwest Ohio region's competitive service providers since it evolved out of the Dayton Entrepreneur Center in 2001. With its advanced applications and groundbreaking network technologies, this communications provider is enabling advanced networking technologies for school districts, libraries, legal organizations, financial groups, and other industries while reducing their costs through sharing resources.

OBJECTIVE

When iFiber weighed the options for building a 260-mile network that would connect 27 school districts in four counties, the competitive service provider considered networking equipment from four major manufacturers. iFiber compared each maker's device features, costs, and performance capabilities, paying particular attention to the ability to scale for future network growth.

After side-by-side comparison tests and much industry research, the innovative technology inherent in the Brocade® FastIron® Edge X switch won the iFiber bid. "Brocade's competitive proposal, plus the switch features, made Brocade the best solution for us," says Patrick Heinz, Founder and CTO at iFiber. "During the last few years, the Brocade edge switch has gotten better and better. Other switch manufacturers have not been able to keep up."

SOLUTION

The Layer 3 capabilities in the Brocade edge devices were a deciding factor in Heinz's purchasing decision. With its modular approach, the Brocade Edge X Switch series allows iFiber to easily upgrade customer bandwidth from 1-Gigabit Ethernet to 10-Gigabit Ethernet. When a school district needs more bandwidth, iFiber will add another module.

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"All of a sudden we can move to 10 Gigabit without adding hardware," says Heinz.

"This scalability keeps the hardware costs down and gives us a long-term approach to supporting increasing network demands. Other switch makers have this capability at the core, but Brocade is the only one that can give us this option at the edge."

In the initial network design, iFiber has deployed Brocade FastIron Super X switches at a point of presence in each of the four counties, and two FastIron Edge X 424 switches are deployed at each of the schools. The FastIron Super X switch has a Layer 2 and Layer 3 forwarding rate of 304 Mpps and a total switching capacity of 510 Gbps. The FastIron Edge X 424 switches deliver 88 Gbps switching performance and forward packets at 65 Mpps. Complementing these performance rates, iFiber further strengthened the network—and minimized costs—by building a redundant ring topology. This design was enabled by the Brocade switches' Metro Ring Protocol, which ensures reliability and availability.

RESULTS

Cost savings were a significant factor in iFiber's purchasing decision. When comparing bids, the Brocade proposal was one-third the price of the incumbent's bid, and potential long-term savings caught everyone's attention. The Brocade solution would save each district approximately \$1,000 per month—a number that appeals to any budget-strapped school district.

With the Brocade-based network, the school districts have gained 10-times the bandwidth capacity of the previous network. Upgrading the school districts' network unleashed a powerful collection of bandwidth-intensive applications for the teachers, students, and administrators. One school district quickly took advantage of the newfound bandwidth capacity by introducing voice over IP (VoIP).

In less than 10 hours after deploying the Brocade-based network, iFiber's data acquisitions partner moved the school's voice communications to VoIP. Heinz views this achievement as a proof point of the Brocade switches' flexibility and robustness.

"VoIP was an application that we discussed introducing at some point, but not at deployment," he says. "The Brocade equipment was able to adapt to the change of plans and within a day, the network was supporting VoIP seamlessly."

The plug-and-play nature of the Brocade switches is another point of pride that has contributed to the network's success. Cisco devices are scattered throughout the school districts' local networks so interoperability was a must-have for a smooth network migration.

"Many times devices from different manufacturers don't play well together," says Heinz. "The interoperability between Cisco and Brocade devices has been flawless since we deployed the network."

Heinz adds that working with the Brocade sales and engineering team has been extremely rewarding for iFiber and its partners.

"Brocade has a proactive approach toward implementing and designing the network, as well as working with our end customer," he says. "We do not receive that kind of personal attention from any other vendor."

Based on this positive experience, iFiber expects to add more Brocade equipment within its ever-expanding network—especially for customers looking to support data-intensive applications such as video. These forward-looking technologies, combined with iFiber's ability to facilitate costs savings for regional businesses by minimizing network overhead and resources, set iFiber apart from its competitors and help the service provider drive economic development in its region.

"Because of our experience with the Brocade equipment and the support we have received, we will continue to add Brocade devices in our networks," says Heinz. "We are replacing much of our current equipment with Brocade devices, and we are considering Brocade for other solutions we are developing. With Brocade, we can share our cost savings with customers and help promote advanced communication network opportunities to businesses throughout our region."

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